

LONDON- WEST MIDLANDS ENVIRONMENTAL STATEMENT

Volume 5 | Technical Appendices

CFA20 | Curdworth to Middleton

Construction assessment (SV-003-020)

Sound, noise and vibration

November 2013

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Department
for Transport

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High Speed Two (HS2) Limited,
Eland House,
Bressenden Place,
London SW1E 5DU

Details of how to obtain further copies are available from HS2 Ltd.

Telephone: 020 7944 4908

General email enquiries: HS2enquiries@hs2.org.uk

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Appendix SV-003-020

Environmental topic:	Sound, noise and vibration	SV
Appendix name:	Construction assessment	003
Community forum area:	Curdworth to Middleton	020

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1 Introduction

- 1.1.1 The sound, noise and vibration appendices comprise four sections. The first of these is an introduction to the relevant route-wide methodology, assumptions and assessment (Volume 5: Appendix SV-100-000). This relates to the sound, noise and vibration assessment for all community forum areas (CFA).
- 1.1.2 For the Curdworth to Middleton community forum area (CFA20), the other three sections are as follows:
- baseline sound, noise and vibration (Appendix SV-002-020);
 - construction sound, noise and vibration (Appendix SV-003-020) (this appendix); and
 - operational sound, noise and vibration (Appendix SV-004-020).
- 1.1.3 The outcomes of the assessment are summarised in Volume 2: CFA20 Report, Section 11 Sound, noise and vibration.
- 1.1.4 Maps referred to throughout the sound, noise and vibration appendices are contained in the Volume 5 map book.
- 1.1.5 This appendix presents the likely noise and vibration impacts, effects and significant effects arising from the construction of the Proposed Scheme for the Curdworth to Middleton area on:
- people, primarily where they live ('residential receptors') in terms a) individual dwellings and b) on a wider community basis, including any shared community open areas; and
 - community facilities such as schools, hospitals, places of worship, and also commercial properties such as offices and hotels, collectively described as 'non-residential receptors' and 'quiet areas'.
- 1.1.6 The assessment of likely impacts, effects and significant effects from construction noise and vibration on agricultural, community, ecological or heritage receptors and the assessment of tranquillity are presented in the following documents within Volume 5:
- | | |
|-----------------------------------|--------------------------|
| • Agriculture, forestry and soils | Appendix AG-001-020; |
| • Community | Appendix CM-001-020; |
| • Ecology | Appendix EC-005-020; |
| • Heritage | Appendix CH-003-020; and |
| • Landscape and Visual | Appendix LV-001-020. |

1.2 Evaluation of impacts and effects

- 1.2.1 This appendix provides a quantitative assessment of construction noise and vibration impacts/effects and a qualitative assessment of likely significant effects, based on the impacts/effects identified and other local context information consistent with the scope and methodology defined for the Proposed Scheme.
- 1.2.2 Indirect effects arising from temporary changes in traffic patterns on the existing road network, as a consequence of constructing the Proposed Scheme, are also reported in this appendix, where they would occur within the study area as defined in Volume 5: Appendix SV-001-000.
- 1.2.3 In undertaking the assessment of sound and vibration, consistent with Environmental Impact Assessment (EIA) Regulations and emerging National Planning Practice Guidance¹, a differentiation between impacts effects, adverse effects and significant effects is made. Further information is provided in Volume 5: Appendix SV-001-000.
- 1.2.4 The assessment of impacts and effects has been undertaken at assessment locations that are representative of a number of dwellings or other sensitive receptors. The Assessment Locations employed in this assessment are presented on map series Sv-03 in the CFA20 Volume 5 sound, noise and vibration map book.

¹ Information is provided in the emerging National Planning Practice Guidance – Noise <http://planningguidance.planningportal.gov.uk>, refer to the noise exposure hierarchy.

2 Scope, assumptions and limitations

2.1 Regional and local policy guidance

2.1.1.1 The policy framework for sound, noise and vibration is set out in Volume 1 and in Appendix SV-001-000. As part of the engagement with local authorities through the Planning Forum Sub Group - Acoustics, information regarding any specific local planning guidance in respect of noise and vibration has been requested. Whilst no information has been received for this study area via the Planning Forum Sub Group - Acoustics, the following local policy guidance on noise and vibration has been identified:

- The Lichfield District Council – Local Plan – Our Strategy (July 2012)

2.1.1.2 This guidance has been considered as part of formulating the detailed application of the impact and significance criteria set out in Volume 5: Appendix SV-001-000.

2.2 Engagement

2.2.1 Details of engagement on a route-wide basis with the local and county authorities' Environmental Health Practitioners via the Planning Forum Sub Group - Acoustics, is set out in Volume 1.

2.2.2 Engagement with communities has been via the Community Forums, as set out in Volume 1. In respect of sound, noise and vibration the following discussions have taken place:

- general discussions in respect of local issues, including possible ways to avoid and mitigate the potential impacts of noise or vibration
- September/October 2012; a specific presentation about sound, noise and vibration with discussion afterwards with one of the project team specialists;
- November/December 2012; specific request for the Community Forum to propose baseline sound monitoring locations;
- January/February 2013; feedback to the Community Forum on any proposed baseline monitoring locations; and
- verbal/written response to questions regarding sound, noise and vibration.

2.3 Methodology

2.3.1 The methodology used for the assessment of airborne sound, ground-borne sound and vibration impacts and the determination of significant effects is defined in the Scope and Methodology Report (SMR) (Volume 5: Appendix CT-001-000/1), and clarified in a number of areas by the SMR addendum (Volume 5: Appendix CT-001-000/2). Further information is contained in Volume 5: Appendix SV-001-000.

2.4 Assumptions

2.4.1 Route-wide assumptions are outlined in Volume 1 and are further detailed in Volume 5: Appendix SV-001-000. Local assumptions that apply to the assessment of

construction sound, noise and vibration within this CFA are set out in Volume 2: Report 20.

2.5 **Limitations**

- 2.5.1 The route-wide limitations and the approach adopted to assure that they will not impact the robust assessment of sound, noise and vibration are presented in Volume 5: Appendix SV-001-000. In this area, there are a number of locations where the land or property owners did not permit baseline sound level monitoring to be undertaken at their premises. However, sufficient information has been obtained to undertake the assessment. Further information is provided in Volume 5: Appendix SV-002-020.

3 Environmental Baseline

3.1 Existing baseline

- 3.1.1 Baseline sound level data has been collected at locations representative of the airborne sound-sensitive receptors. The existing and future baseline airborne sound levels derived from these measurements are given in Volume 5: Appendix SV-002-020. Details of the baseline data collection and the methodology are given in Volume 5: Appendix SV-001-000 and, specifically for this study area, in Volume 5: Appendix SV-002-020.

3.2 Future baseline

- 3.2.1 The assessment of noise from construction activities assumes a baseline year of 2017, which represents the period immediately prior to the start of the construction period. As a reasonable worst case, it has been assumed that no change in baseline sound levels will occur between the existing baseline (2012/13) and the future baseline year of 2017. The assessment of noise from construction traffic assumes a baseline year of 2021, representative of the middle of the construction period when the construction traffic flows are expected to be at their peak. Further information can be found in the Traffic and Transport assessment (Appendix TT-001-020).

4 Effects arising during construction

4.1 Introduction

4.1.1 The assessment is reported first for ground-borne sound and vibration and then for airborne sound. Under each of these headings, the results of the quantitative identification of impacts and effects are presented. This is followed by the identification of significant effects and the evidence used to support these conclusions.

4.1.2 The structure of this assessment report is:

- avoidance and mitigation measures;
- quantitative identification of impact and effects:
 - ground-borne sound and vibration:
 - residential; and
 - non-residential.
 - airborne sound:
 - residential; and
 - non-residential.
- assessment of impacts and effects:
 - residential receptors: direct effects – dwellings;
 - residential receptors: direct effects – communities;
 - residential receptors: indirect effects;
 - non-residential receptors: direct effects;
 - non-residential receptors: indirect effects; and
 - cumulative effects from the proposed scheme and other committed development.

4.2 Avoidance and mitigation measures

4.2.1 These are set out in Volume 2: Report 20.

4.3 Quantitative identification of impacts and effects

Ground-borne vibration

4.3.1 Assessment locations defined for the quantitative assessment of impacts are shown on map series SV-02 in the CFA20 Volume 5 sound, noise and vibration map book.

4.3.2 For each Assessment Location, the assessment results for residential and non-residential receptors are presented in Table 1. Explanation of the information in

Table 1 is provided in Volume 5: Appendix SV-001-000, with the following additional notes:

	Where the significant effect column is highlighted, then a significant effect is identified at the referenced community, or individual receptor.
*	Significant effect – the quantitative impact methodology has identified either: <ol style="list-style-type: none"> 1) no impact at this receptor but further information (see assessment) has identified that a significant effect is nonetheless likely; or 2) an impact at this receptor which, based upon further qualitative receptor information, (see assessment text) does not give rise to a significant effect
~	Significant effect – the forecast adverse effects are not considered to be significant on a community basis (further information on methodology is provided in Volume 5: Appendix SV-001-000)
A	Type of effect – adverse effect
S	Type of effect – significant adverse effect
NA	Type of effect – not generally an adverse effect
B	Type of effect – for non-residential receptors further detail about the type of effect is set out in the text of Volume 5: Appendix SV-001-000
V1	Type of receptor – (V1) vibration sensitive research and manufacturing, hospital, and university equipment, (V2) hotels, hospital wards and education dormitories, (V3) offices, schools and places of worship, (V4) workshops
T	Receptor design – typical
S	Receptor design – special

Appendix SV-003-020 | Effects arising during construction

Table 1: Assessment of construction induced ground-borne vibration at residential receptors

Assessment location		Impact criteria				Significance criteria										Significant effect
ID	Area represented	Peak particle velocity (PPV) [mm/s] on foundation	Typical/highest monthly indoor vibration dose value (VDV) [m/s ^{1.75}]		Construction activity resulting in highest forecast vibration levels	Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Impact duration [months]	Mitigation effect		
			Day 0700-2300	Night 2300-0700												
131532	Marston Lane, Curdworth, Sutton Coldfield	0.37	0.18/0.18	-	Earthworks	NA	1	R	T	-	-	-	10	-		
153252	Newlands Lane, Curdworth, Sutton Coldfield	0.58	0.26/0.26	-	Earthworks	A	2	R	T	-	-	-	4	-	~	
153857	Kingsbury Road, Marston, Sutton Coldfield	0.15	0.08/0.08	-	Railhead earthworks	NA	1	R	T	-	-	-	22	-		
153874	Kingsbury Road, Marston, Sutton Coldfield	0.19	0.1/0.1	-	Railhead earthworks	NA	3	R	T	-	-	-	22	-		
153895	Lock House Lane, Curdworth, Sutton Coldfield	0.13	0.04/0.04	-	Earthworks	NA	1	R	T	-	-	-	1	-		
157219	Brick Kiln Lane, Middleton, Tamworth	0.28	0.14/0.14	-	Earthworks	NA	1	R	T	-	-	-	20	-		
157992	Cuttle Mill Lane, Wishaw, Sutton Coldfield	0.38	0.18/0.18	-	Earthworks	NA	1	R	T	-	-	-	3	-		
711047	Colehill Road, Middleton	0.17	0.04/0.04	-	Earthworks	NA	1	R	T	-	-	-	10	-		
721024	Kingsbury Road, Curdworth, Sutton Coldfield	0.21	0.11/0.11	-	Railhead earthworks	NA	1	R	T	-	-	-	22	-		

Table 2: Assessment of construction induced ground-borne vibration at non-residential receptors

Assessment location		Impact criteria				Significance criteria										Significant effect
ID	Area represented	PPV [mm/s] on foundation	Typical/highest monthly indoor VDV [m/s ^{1.75}]		Construction activity resulting in highest forecast vibration levels	Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Impact duration [months]	Mitigation effect		
			Day 0700-2300	Night 2300-0700												
153646	Kingsbury Road, Curdworth, Sutton Coldfield	0.61	0.27/0.27	-	Earthworks	B	2	V3	T	-	-	Y	9	-		
711046	Coleshill Road, Middleton	0.85	0.35/0.35	-	Earthworks	B	1	V3	T	-	-	-	20	-		
721021	Hams Lane, Coleshill, Birmingham	0.27	0.13/0.13	-	Railhead earthworks	B	1	V3	T	-	-	-	22	-		

Airborne sound: direct impacts and effects

- 4.3.3 Activities associated with the construction phases of the Proposed Scheme would generate airborne noise. The assessment of the likely impacts and significant effects as a result of the construction noise has considered the effects on:
- residential receptors, both as individual dwellings and communities; and
 - non-residential receptors, including quiet areas.
- 4.3.4 For each type of receptor, subject to the screening distances identified, and based upon supplied plant information from engineers, the typical and highest monthly $L_{Aeq,T}$ noise levels from construction activities have been calculated at the façade of all assessment locations, which are representative of a number of receptors in the study area.
- 4.3.5 The assessment results, impact criteria and significance criteria for the assessment of the scheme at residential and non-residential receptors are presented in Table 3 and Table 4 respectively.
- 4.3.6 Explanation of the information within Table 3 and Table 4 is provided in Volume 5: Appendix SV-001-000, with the following additional notes:

	Where the significant effect column is highlighted, then a significant effect is identified at the referenced community, or individual non-residential receptor
*	Significant effect – the quantitative impact methodology has identified either: <ol style="list-style-type: none"> 1) no impact at this receptor but further information (see assessment) has identified that a significant effect is nonetheless likely; or 2) an impact at this receptor which, based upon further qualitative receptor information, (see assessment text) does not give rise to a significant effect
~	Significant effect – the forecast adverse effects are not considered to be significant on a community basis (further information on methodology is provided in Volume 5: Appendix SV-001-000)
A	Type of effect – adverse effect
S	Type of effect – significant adverse effect
NA	Type of effect – not generally an adverse effect
B	Type of effect – for non-residential receptors further detail about the type of effect is set out in the text of Appendix SV-001-000
R	Type of receptor – residential
G	Type of receptor - (G1) theatres, large auditoria and concert halls, (G2) sound recording and broadcast studios, (G3) places of meeting for religious worship, courts, cinemas, lecture theatres, museums and small auditoria or halls, (G4) schools, colleges, hospitals, hotels and libraries, and (G5) offices and general commercial premises
T	Receptor design – typical
S	Receptor design – special
H	Existing environment – high existing ambient noise levels, day >75dB, evening >65dB or night >55dB L_{pAeq} at the facade
L	Existing environment – low existing ambient noise levels, day ≤45dB, evening ≤45dB or night ≤35dB L_{pAeq} at the facade
NI	Mitigation effect - identified as likely to qualify for noise insulation under the draft CoCP

Table 3: Assessment of construction noise at residential receptors

Assessment location		Impact criteria				Significance criteria									Significant effect
ID	Area represented	Typical/highest monthly outdoor L_{pAeq} [dB] at the facade [Assessment category A/B/C]			Construction activity resulting in highest forecast noise levels	Type of effect	Number of impacts	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Impact duration [months]	Mitigation effect	
		Day 0700-1900	Evening 1900-2300	Night 2300-0700											
131532	Marston Lane, Curdworth, Sutton Coldfield	65/71 [C]	-	-	Viaduct superstructure	NA	1	R	T	-	-	-	-	-	
148867	Marsh Lane, Curdworth, Sutton Coldfield	53/59 [C]	-	-	Road construction	NA	1	R	T	-	-	-	-	-	
149112	Lichfield Road, Curdworth, Sutton Coldfield	53/57 [C]	-	-	Bridge superstructure	NA	1	R	T	-	-	-	-	-	
152897	Edison Road, Hams Hall Distribution Park, Coleshill, Birmingham	51/56 [C]	-	-	Viaduct superstructure	NA	1	R	T	-	-	-	-	-	
153153	Edison Road, Hams Hall Distribution Park, Coleshill, Birmingham	63/67 [A]	-	-	Viaduct superstructure	A	1	R	T	-	-	-	21	-	~
153252	Faraday Avenue, Curdworth, Sutton Coldfield	69/76 [B]	-	-	Bridge superstructure	S	2	R	T	-	-	-	15	NI	CSV20-D01
153646	Kingsbury Road, Curdworth, Sutton Coldfield	74/79 [A]	-	-	Earthworks	S	1	R	T	-	-	-	38	NI	CSV20-D02
153754	Kingsbury Road, Curdworth, Sutton Coldfield	56/63 [A]	-	-	Demolition works	NA	1	R	T	-	-	-	-	-	
153857	Kingsbury Road, Marston, Sutton Coldfield	58/61 [C]	-	-	Railhead earthworks	NA	1	R	T	-	-	-	-	-	
153874	Kingsbury Road, Marston, Sutton Coldfield	62/65 [C]	-	-	Railhead earthworks	NA	3	R	T	-	-	-	-	-	
153895	Lock House Lane, Curdworth, Sutton Coldfield	62/68 [C]	-	-	Demolition works	NA	1	R	T	-	-	-	-	-	
154911	Bodymoor Heath Lane, Middleton, Tamworth	51/55 [A]	-	-	Earthworks	NA	1	R	T	-	-	-	-	-	

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Assessment location		Impact criteria				Significance criteria									Significant effect
ID	Area represented	Typical/highest monthly outdoor L _{pAeq} [dB] at the facade [Assessment category A/B/C]			Construction activity resulting in highest forecast noise levels	Type of effect	Number of impacts	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Impact duration [months]	Mitigation effect	
		Day 0700-1900	Evening 1900-2300	Night 2300-0700											
156159	Church Lane, Middleton, Tamworth	50/55 [B]	-	-	Viaduct superstructure	NA	4	R	T	-	-	-	-	-	
156221	Church Lane, Middleton, Tamworth	47/51 [A]	-	-	Earthworks	NA	8	R	T	-	-	-	-	-	
156581	Simmons Close, Middleton, Tamworth	49/53 [B]	-	-	Earthworks	NA	14	R	T	-	-	-	-	-	
156612	Church Lane, Middleton, Tamworth	50/54 [B]	-	-	Earthworks	NA	3	R	T	-	-	-	-	-	
156682	Church Lane, Middleton, Tamworth	50/55 [A]	-	-	Viaduct superstructure	NA	3	R	T	-	-	-	-	-	
157025	Tamworth Road, Wishaw, Sutton Coldfield	50/53 [C]	-	-	Viaduct superstructure	NA	3	R	T	-	-	-	-	-	
157219	Brick Kiln Lane, Middleton, Tamworth	62/68 [C]	-	-	Earthworks	NA	1	R	T	-	-	-	-	-	
157233	Tamworth Road, Middleton, Tamworth	54/58 [C]	-	-	Bridge superstructure	NA	1	R	T	-	-	-	-	-	
157376	Wishaw Lane, Middleton, Tamworth	52/57 [A]	-	-	Earthworks	NA	1	R	T	L	-	-	-	-	
157444	Wishaw Lane, Middleton, Tamworth	52/56 [A]	-	-	Road construction	NA	3	R	T	L	-	-	-	-	
157480	Church Lane, Middleton, Tamworth	51/57 [B]	-	-	Bridge superstructure	NA	8	R	T	-	-	-	-	-	
157513	Church Lane, Middleton, Tamworth	55/63 [B]	-	-	Road construction	NA	4	R	T	-	-	-	-	-	
157552	Church Lane, Middleton, Tamworth	49/60 [B]	-	-	Road construction	NA	8	R	T	-	-	-	-	-	
157573	Church Lane, Middleton, Tamworth	54/66 [B]	-	-	Road construction	NA	7	R	T	-	-	-	-	-	

Assessment location		Impact criteria				Significance criteria									Significant effect
ID	Area represented	Typical/highest monthly outdoor L _{pAeq} [dB] at the facade [Assessment category A/B/C]			Construction activity resulting in highest forecast noise levels	Type of effect	Number of impacts	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Impact duration [months]	Mitigation effect	
		Day 0700-1900	Evening 1900-2300	Night 2300-0700											
157603	Church Lane, Middleton, Tamworth	59/69 [A]	-	-	Road construction	A	5	R	T	-	-	-	2	-	CSV20-Co1
157635	Tamworth Road, Middleton, Tamworth	53/63 [C]	-	-	Road construction	NA	2	R	T	-	-	-	-	-	
157725	Crowberry Lane, Middleton, Tamworth	56/62 [A]	-	-	Road construction	NA	1	R	T	L	-	-	-	-	
157992	Cuttle Mill Lane, Wishaw, Sutton Coldfield	68/71 [A]	-	-	Earthworks	A	1	R	T	-	-	-	45	-	~
158003	Dog Lane, Sutton Coldfield	49/53 [B]	-	-	Railhead earthworks	NA	1	R	T	-	-	-	-	-	
158342	Bodymoor Heath Lane, Middleton, Tamworth	59/64 [A]	-	-	Earthworks	NA	1	R	T	-	-	-	-	-	
158349	Bodymoor Heath Lane, Middleton, Tamworth	59/69 [A]	-	-	Road construction	A	1	R	T	-	-	-	2	-	~
191067	Haunch Lane, Lea Marston, Sutton Coldfield	50/55 [A]	-	-	Railhead earthworks	NA	4	R	T	-	-	-	-	-	
711047	Coleshill Road, Middleton	58/63 [A]	-	-	Viaduct superstructure	NA	1	R	T	-	-	-	-	-	
721024	Kingsbury Road, Curdworth, Sutton Coldfield	65/73 [A]	-	-	Railhead track works	NA	1	R	T	-	-	-	19	-	~
721025	Kingsbury Road, Curdworth, Sutton Coldfield	53/54 [A]	-	-	Railhead Earthworks	NA	1	R	T	-	-	-	-	-	
721026	Kingsbury Road, Curdworth, Sutton Coldfield	52/55 [A]	-	-	Railhead earthworks	NA	1	R	T	-	-	-	-	-	

Appendix SV-003-020 | Effects arising during construction


Table 4: Assessment of construction noise at non-residential receptors

Assessment location		Impact criteria				Significance criteria									Significant effect
ID	Area represented	Typical/highest monthly outdoor L _{pAeq} [dB] at the facade			Construction activity resulting in highest forecast noise levels	Type of effect	Number of impacts	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Impact duration [months]	Mitigation effect	
		Day 0700-1900	Evening 1900-2300/Weekend	Night 2300-0700											
131403	Curdworth Primary School, Farthing Lane, Curdworth, Sutton Coldfield	46/52	-	-	Railhead track works	B	1	G4	T	-	-	-	-	-	
149112	General Commercial, Lichfield Road, Curdworth, Sutton Coldfield	53/57	-	-	Bridge superstructure	B	2	G5	T	-	-	-	-	-	
152897	General Commercial, Edison Road, Hams Hall Distribution Park, Coleshill, Birmingham	51/56	-	-	Viaduct superstructure	B	6	G5	T	-	-	-	-	-	
153153	General Commercial, Edison Road, Hams Hall Distribution Park, Coleshill, Birmingham	63/68	-	-	Viaduct superstructure	B	1	G5	T	-	-	-	-	-	
153470	Electricity Alliance, Hams Lane, Coleshill, Birmingham	53/59	-	-	Railhead track works	B	1	G5	T	-	-	-		-	
153646	General Commercial, Kingsbury Road, Curdworth, Sutton Coldfield	74/79	-	-	Earthworks	B	2	G5	T	-	-	Y	38	-	CSV20-No1
153754	General Commercial, Kingsbury Road, Curdworth, Sutton Coldfield	56/63	-	-	Demolition works	B	1	G5	T	-	-	-	-	-	-
154354	Shopping, Church Lane, Middleton, Tamworth	48/53	-	-	Bridge superstructure	B	1	G5	T	-	-	-	-	-	-
156042	Equestrian Training, Vicarage Hill, Middleton, Tamworth	49/54	-	-	Earthworks	B	1	G4	T	L	-	-	-	-	-
156490	Pre School Education, Coppice Lane, Middleton, Tamworth	50/54	-	-	Earthworks	B	1	G4	T	-	-	-	-	-	
156675	Hall, Church Lane, Middleton, Tamworth	46/49	-	-	Earthworks	B	1	G3	T	-	-	-	-	-	




Assessment location		Impact criteria				Significance criteria									Significant effect
ID	Area represented	Typical/highest monthly outdoor L _{pAeq} [dB] at the facade			Construction activity resulting in highest forecast noise levels	Type of effect	Number of impacts	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Impact duration [months]	Mitigation effect	
		Day 0700-1900	Evening 1900-2300/Weekend	Night 2300-0700											
156781	Office, Coppice Lane, Middleton, Tamworth	51/56	-	-	Earthworks	B	1	G5	T	-	-	-	-	-	
157038	Office, Lichfield Road, Wishaw, Sutton Coldfield	51/55	-	-	Railhead earthworks	B	2	G5	T	-	-	-	-	-	
157725	Stables, Crowberry Lane, Middleton, Tamworth	56/62	-	-	Road construction	B	1	G5	T	L	-	-	-	-	
158003	Hotel, Dog Lane, Bodymoor Heath, Sutton Coldfield	49/53	-	-	Railhead earthworks	B	1	G4	T	-	-	-	-	-	
158471	Office, Middleton Hall, Middleton, Tamworth	51/56	-	-	Road construction	B	1	G5	T	-	-	-	-	-	
191067	General Commercial, Haunch Lane, Lea Marston, Sutton Coldfield	50/55	-	-	Railhead earthworks	B	2	G5	T	-	-	-	-	-	
700643	Church, Coppice Lane, Middleton, Tamworth	48/51	-	-	Bridge superstructure	B	1	G3	T	-	-	-	-	-	
700645	Inn, Church Lane, Middleton, Tamworth	45/48	-	-	PRoW superstructure	B	1	G5	T	-	-	-	-	-	
711046	Coleshill Road, Middleton	56/59	-	-	Haul road construction	B	1	G5	T	-	-	-	-	-	
721021	Hams Lane, Coleshill, Birmingham	56/67	-	-	Railhead track works	B	1	G5	T	-	-	-	-	-	
721028	Brook Marston Hotel, Dog Lane, Sutton Coldfield	58/61	-	-	Railhead earthworks	B	1	G4	T	-	-	-	-	-	

Airborne sound: indirect effects

- 4.3.7 Construction road traffic associated with the construction phases of the Proposed Scheme would generate airborne noise. Based upon traffic information for the Proposed Scheme, the change in traffic noise level at a reference distance of 10m from the edge of the nearside carriageway resulting from the presence of construction traffic for a given road has been predicted. The results for potentially significant road links are presented in Table 5.
- 4.3.8 Explanation of the information within Table 5 is provided in Volume 5: Appendix SV-001-000, with the following additional notes:

 Where the significant effect column is highlighted, then a significant effect is identified on nearby communities or individual receptors

Change values

-  Yellow denotes a minor impact – a change is of 3-5dB or 1-3dB where a high existing sound level is identified
-  Orange denotes a moderate impact – a change is of 5-10dB or 3-5dB where a high existing sound level is identified
-  Red denotes a major impact – a change is of >10dB or >5dB where a high existing sound level is identified

Appendix SV-003-020 | Effects arising during construction

Table 5: Assessment of construction traffic noise levels

Road name	Link	Future baseline sound level (dB)	Future baseline sound level + construction traffic (dB)	Change (dB)	Significant effect
		Daytime L _{pAeq,16hr} 0700-23:00 free-field	Daytime L _{pAeq,16hr} 0700-2300 free-field		
A446 Lichfield Road	Hams Hall Roundabout to B4117 Watton Lane	73.0	75.2	2.2	
Faraday Avenue	A446 Lichfield Road to Edison Road	73.4	73.5	0.1	
A446 Lichfield Road	Hams Hall roundabout to the Jct 9 of the M42 motorway	74.7	75.3	0.6	
A4097 Kingsbury Road	A446 Lichfield Road to Kingsbury Road Railhead	71.0	71.2	0.2	
A446 Lichfield Road	Jct 9 M42 motorway to the A4091 roundabout	74.1	74.4	0.3	
A4091	A446 Lichfield to Bodymoor Heath Road	69.3	69.9	0.6	
A446 Lichfield/London Road	A4091 roundabout to Bassetts Pole roundabout	73.2	73.7	0.5	
A4091	Church Lane to Bodymoor Heath Road	71.1	71.3	0.2	
Church Lane	A4091 to Church Lane Overbridge Compound	55.8	57.1	1.3	

4.4 Assessment of significant effects

Residential receptors: direct effects – individual dwellings

- 4.4.1 Taking account of the avoidance and mitigation measures set out in the previous paragraphs, three residential buildings (two dwellings adjacent to Faraday Avenue and one dwelling in the vicinity of Kingsbury Road) are forecast to experience noise levels higher than the noise insulation trigger levels as defined in the draft CoCP. For daytime construction the trigger level is an equivalent continuous noise level of 75dB² measured outdoors.
- 4.4.2 The mitigation measures will reduce noise inside all dwellings such that it does not reach a level where it would significantly affect³ residents.

Residential receptors: direct effects –communities

- 4.4.3 The avoidance and mitigation measures in this area will avoid airborne construction noise adverse effects¹ on the majority of receptors and communities. Residual temporary noise or vibration effects are identified later in this section.
- 4.4.4 It is anticipated that there may be some night-time working during road and rail possession periods. Night-time construction activities in this area would be restricted to where the route crosses existing railway lines, roads or where newly constructed roads tie into the existing road network for reasons of safety, engineering practicability or to reduce the impact on existing transport. These works are likely to be of short duration, and be limited in the types of activities being undertaken. As a consequence, it is expected that the noise effects from night time activities would be limited in duration and hence would not be considered significant.
- 4.4.5 In the vicinity of Kingsbury Road, a construction railhead is also located. This facility will be temporary and be established and operated during the construction phase of HS2 for the movement of construction material deliveries and as an access to the HS2 trace for ballast and track laying.
- 4.4.6 The railhead will be connected to the classic rail network so that the movements of materials, both into and out of the railhead, can be made by rail at any time during the construction period.
- 4.4.7 The movement of trains to and from the railhead on the classic rail network will utilise available train paths and will comprise a very small percentage of total train movements on the classic rail network. The likely residual effects associated with train movements to and from railheads during the construction of the Proposed Scheme are therefore not regarded as significant.
- 4.4.8 With regard to noise outside dwellings, the assessment of temporary effects takes account of construction noise relative to existing sound levels.
- 4.4.9 In locations with lower existing sound levels⁴, construction noise effects are likely to be caused by changes to noise levels outside dwellings. These may be considered by

² L_{pAeq,0800-1800} measured at the facade.

³ Information is provided in the emerging National Planning Practice Guidance – Noise <http://planningguidance.planningportal.gov.uk..>

⁴ Further information is provided in Volume 5: Appendix SV-001-000.

the local community as an effect on the acoustic character of the area and hence be perceived as a change in the quality of life. These effects are considered to be significant when assessed on a community basis taking account of the local context⁴.

- 4.4.10 The direct adverse construction noise effects¹ on the areas of the residential communities identified in Table 6 are considered to be significant.
- 4.4.11 Table 6 presents a summary of the likely residual significant direct effects on residential communities. The typical and worst case construction noise levels are reported to the nearest 5dB. The number of dwellings in each community has also been rounded to the nearest 5-10 properties.

Table 6: Direct adverse effects on residential communities and shared open areas that are considered to be significant on a community basis

Significant effect number	Type of significant effect	Time of day	Location	Cause (construction activities)	Assumed duration of impact
CSV20-Co1	Construction airborne noise	Day	Approximately 5 dwellings on Church Lane, Middleton	Roadworks associated with the construction of Church Lane overbridge, with typical and highest monthly noise levels of around 60dB and 70dB ⁶ .	2 months

Residential receptors: indirect effects

- 4.4.12 A minor impact, due to construction traffic, is predicted along the A446 Lichfield Road. Taking account of incorporated mitigation, the limited number of properties adjacent to this road and the predicted change in traffic noise levels; no indirect construction noise significant effects have been identified.

Non-residential receptors: direct effects

- 4.4.13 Significant construction noise or vibration effects have been identified on a worst case basis on the following non-residential receptors, the typical and worst case noise levels are reported to the nearest 5dB:
- Commercial properties (related to a veterinary practice) located in the vicinity of Kingsbury Road (CSV20-No1). A significant noise effect⁵ has been identified on a reasonably foreseeable worst case basis during the daytime at Dunton Hall, a Grade II listed three storey, red brick building with a pitched tiled roof. The noise effects⁵ have been identified during the daytime with noise levels rising at times to 80dB⁶, over a period of approximately 38 months commencing 2019 during the construction of the Curdworth Cutting.

Non-residential receptors: indirect effects

- 4.4.14 Significant noise effects on non-residential receptors arising from construction traffic are unlikely to occur in this area.

⁵ Activity disturbance, especially for activities that require good conditions for verbal communication.

⁶ Equivalent continuous sound level at the facade, L_{pAeq, 0700-1900}.

Cumulative effects from the Proposed Scheme and other committed development

- 4.4.15 This assessment has considered the potential cumulative construction noise effects of the proposed scheme and other committed developments⁷. In this area, there is no committed development that would be built at the same time as the Proposed Scheme and accordingly, construction noise or vibration from the Proposed Scheme is unlikely to result in any significant cumulative noise effects.

⁷ Refer to Volume 5: Appendix CT-004-000.

5 References

Control of Pollution Act 1974 (c.40). London, Her Majesty's Stationery Office.

Environmental Protection Act 1990. London, Her Majesty's Stationery Office.